

A Collaborative Effort between the U.S. Environmental Protection Agency, the Food and Drug Administration, and the University of Arkansas to Develop a Method for the Determination of Part Per Billion Levels of Carbamate Pesticide Residues in Eggs

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The Food Quality Protection Act (FQPA), passed by Congress in 1996, emphasizes the protection of the food supply for children and requires the U.S. Environmental Protection Agency (U.S. EPA) to determine cumulative dietary exposure to pesticides for infants and children. In order to do so, pesticide residue monitoring data are needed at lower levels than has historically been reported by either State laboratories or by the FDA compliance-monitoring program. An important component of this FQPA goal is the development of methods to quantify trace levels of carbamate pesticides in foods likely to be found in the diets of children. A recent collaborative study with the FDA, initiated and led by the U.S. EPA, resulted in the development of a method for monitoring carbamate residues in fruits and vegetables at parts-per-billion (ppb) levels. A second collaborative study between the U.S. EPA, the FDA, and the University of Arkansas, initiated by the FDA, is currently underway to extend this monitoring capability to the determination of carbamates in eggs.

Pesticide residues may enter eggs when pesticides are present in the feed of hens or when hens are directly treated with pesticides for external parasites. For example, the carbamate pesticide carbaryl is routinely used for treating mites on hens by dusting or dipping. Studies have shown that hens treated for mites with carbaryl will produce eggs with measurable pesticide residues for a number of weeks. The new analytical method for carbamate pesticides in eggs described in this poster can be used by Federal and State laboratories nationwide to acquire important monitoring data for the U.S. EPA.